

CoolPoly® E2

Thermally Conductive Liquid Crystalline Polymer

Description

CoolPoly E series of thermally conductive plastics transfers heat, a characteristic previously unavailable in injection molding grade polymers. CoolPoly is lightweight, netshape moldable and allows design freedom in applications previously restricted to metals. The E series is electrically conductive and provides inherent EMI/RFI shielding characteristics.

Physical Properties	Value	Unit	Test Standard
Density	1840	kg/m ³	ISO 1183
Mold Shrinkage – Parallel	0.1	%	ISO 294-4
Mold Shrinkage – Normal	0.3	%	ISO 294-4
Mechanical Properties	Value	Unit	Test Standard
Tensile Modulus	24300	MPa	ISO 527-1
Tensile Strength	80	MPa	ISO 527-1
Strain @ Break	0.25	%	ISO 527-1
Flexural Modulus	32300	MPa	ISO 178
Flexural Strength	139	MPa	ISO 178
Charpy Unnotched (23°C)	4.74	kJ/m ²	ISO 179-1
Charpy Notched (23°C)	1.96	kJ/m ²	ISO 179-1
Electrical Properties	Value	Unit	Test Standard
Surface Resistivity	1	ohm/square	ASTM D257
Volume Resistivity	70	ohm - cm	ASTM D257
Thermal Properties	Value	Unit	Test Standard
Thermal Conductivity, In-Plane	20	W/mK	ASTM E1461
Thermal Diffusivity, In-Plane	0.1	cm ² /sec	ASTM E1461
Specific Heat	0.9	J/g°C	ASTM E1461
DTUL @ 1.8 MPa	268	°C	ISO 75-1/-2
DTUL @ 0.45 MPa	> 300	°C	ISO 75-1/-2
CLTE – Parallel (-30°C to +30°C)	8.2	ppm/°C	ASTM D696
CLTE – Normal (-30°C to +30°C)	9.1	ppm/°C	ASTM D696
Flammability	V0 @ 1.5mm		UL 94